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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,107	02/13/2004	Yoshiaki Eguchi	NIT-411	4558

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MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.
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ALEXANDRIA, VA 22314

EXAMINER

GUYTON, PHILIP A

ART UNIT	PAPER NUMBER
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2113

MAIL DATE	DELIVERY MODE
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09/06/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/777,107	Applicant(s) EGUCHI ET AL.	
	Examiner Philip Guyton	Art Unit 2113	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-20 is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Response to Arguments

2. Applicant's arguments, filed 9 July 2007, with respect to the rejection of claims 1-3 under Duprey have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground of rejection is made in view of Beattie.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 7,981,177 to Beattie.

With respect to claim 1, Beattie discloses a data restoring method for restoring data stored in a second storage system in a storage subsystem including a first storage system and a second storage system (figure 1, items 102, 104), each of which is connected to a host via a communication channel (figure 1, items 106, 108), in which the second storage system stores a copy of data to be transmitted from the first storage system, wherein

the first storage system processes an I/O request from the host (column 3, lines 53-65), and as a result of I/O processing of the second storage system, transmits updated data according to said I/O request (column 4, lines 24-28),

the second storage system retains data received from the first storage system as update log data (column 4, lines 28-39 and 46-54), and

the host transmits a command for settling a state of an application to the first storage system as data (column 5, lines 39-54 and column 6, lines 21-23), the first storage system transmits the data to the second storage system, and the host and the second storage system both retain an identifier corresponding to the command (column 17, lines 51-59), and relate the identifier to the log data whereby the host designates the identifier at any given time to thereby restore data at any given time by the second storage system (figure 7 and column 18, line 59-column 19, line 22).

With respect to claim 2, Beattie discloses wherein the host issues an I/O instruction of an identifier to the second storage system at a remote site (column 17, lines 56-59 and figure 1).

With respect to claim 3, Beattie discloses wherein the second storage system at a remote site receives the I/O instruction of an identifier of the host (column 17, lines 56-59 and figure 1), and relates the update log of data to the identifier to store it in a storage unit (column 18, lines 29-58).

With respect to claim 4, Beattie discloses a data restoring method for restoring data stored in a second storage system in a storage subsystem including a first storage system and a second storage system (figure 1, items 102, 104), each of which is connected to a host via a communication channel (figure 1, items 106, 108), in which the second storage system stores a copy of data to be transmitted from the first storage system, wherein

the first storage system processes an I/O request from the host (column 3, lines 53-65), and as a result of I/O processing of the second storage system, transmits updated data according to said I/O request (column 4, lines 24-28),

the second storage system retains data received from the first storage system as update log data (column 4, lines 28-39 and 46-54), and

the host transmits a command for settling a state of an application to the first storage system as data (column 5, lines 39-54 and column 6, lines 21-23), the first storage system transmits the data to the second storage system, and the host and the second storage system both retain an identifier corresponding to the command (column 17, lines 51-59), and relate the identifier to the log data whereby the host designates the identifier at any given time to thereby restore data at any given time by the second storage system (figure 7 and column 18, line 59-column 19, line 22),

wherein if when restoring data stored in the second storage system to its original state, an identifier which coincides with the identifier which has been transmitted from the host (column 17, lines 56-59) and received is retrieved and the target identifier is searched for (column 18, lines 29-58), the data is restored in a source storage unit to its original state through the use of data stored in a target storage unit and content of the log data recorded prior to the log data related to the coincided identifier (column 17, lines 60-64 and figure 7).

Allowable Subject Matter

5. Claims 5-20 are allowed.
6. The following is a statement of reasons for the indication of allowable subject matter:

The elements of independent claims 5, 6, 7, 12, 18, and 20 were not found through a search of the prior art, nor were they considered obvious by the examiner. In particular, the prior art of record does not teach or suggest:

As in claim 5, "wherein on receipt of an acquisition commencement command of log data and a command for suspending pair duplex of the storage unit from the host, the first storage system confirms a storage unit located in the second storage system which is in the pair duplex to suspend the pair duplex."

As in claim 6, "wherein on receipt of a mark command issued by the host, the second storage system confirms a storage unit which acquires the log data, and sets

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correspondence of a mark ID and mark data, including a timer value, to the log data acquired."

As in claim 7, "saving, when content of the storage unit has been updated, data prior to and subsequent to the update and information indicating a place to update as log data."

As in claims 12, 18, and 20, "a plurality of logical storage units, of which a certain logical storage unit stores a copy of data to be stored in a logical storage unit of the first storage system constituting a pair, and another logical storage unit comprises: a storage unit to be allocated in order to store log data generated by the first storage system; a cache memory for temporarily storing data to be inputted into or outputted from the storage unit; a memory for storing at least management information concerning the logical storage unit, management information for defining a configuration of pair duplex between the first storage system and the second storage system, management information of a log and a program for processing a command from the host; and a processor for executing the program."

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip Guyton whose telephone number is (571) 272-3807. The examiner can normally be reached on M-F 8:00-4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (571) 272-3645. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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8/30/07


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